IMPLEMENTATION TEAM MEETING NOTES

February 6, 1997, 9:00 a.m.-4 p.m.
NATIONAL MARINE FISHERIES SERVICE OFFICES
PORTLAND, OREGON

I. Greeting and Introductions.

The February 6 meeting of the Implementation Team, held at the National Marine Fisheries Service's offices in Portland, Oregon, was chaired by Donna Darm of NMFS. The agenda for the February 6 meeting and a list of attendees are attached as Enclosures A and B. The following is a summary (not a verbatim transcript) of items discussed at the meeting, together with actions taken on those items. Please note that some enclosures referenced in the body of the text may be too lengthy to attach; all enclosures referenced are available upon request from Kathy Mott at 503/230-5420 or via email at Kathy.Mott@noaa.gov.

II. PATH Briefing.

Dave Marmorek of ESSA Technologies, the facilitator for the Plan for Analyzing and Testing Hypotheses (PATH) group, provided a detailed presentation on the background, membership and function of the PATH process. I'd like to do three things today, he said -- first, to share some of the conclusions of the retrospective analyses PATH completed in FY'96, second, to discuss the prospective analyses the PATH group is currently embarked on, and third, to say a few words about some possible decisionmaking approaches. The text of Marmorek's presentation to the IT is reproduced in Enclosure C.

Marmorek spent a few minutes on the background and objectives of the PATH process, explaining that PATH was a byproduct of the Scientific Review Panel's 1994 report on the Analytical Coordination Work Group (ANCOOR). PATH's original objectives included:

> Determine the overall level of support for key alternative hypotheses based on existing information, providing guidance to management agencies.
>
> Propose other hypotheses and/or model improvements that are more consistent with the data.
>
> Assess the ability to distinguish among competing hypotheses for future information.

Advise various institutions (NMFS, NPPC, BPA, USFWS) on research, monitoring and adaptive management experiments which would maximize the rate of learning and clarify decisions.

The PATH participant list, which includes representatives from the Oregon Department of Fish & Wildlife, the Corps of Engineers, Columbia River Inter-Tribal Fish Commission, Idaho Department of Fish & Game, Bonneville Power Administration, National Marine Fisheries Service, Northwest Power Planning Council, Washington Department of Fish & Wildlife, Columbia Basin Fish & Wildlife Authority, ESSA Technologies, U.S. Forest Service, U of W, U.C. San Diego, U.C. Davis, Simon Fraser University and others, is reproduced on p. 3 of Enclosure C. In addition, the PATH participants include a five-member Scientific Review Panel, which is occasionally called upon to review PATH work products. Basically, PATH is an inter-agency group of very high-caliber scientists, Marmorek explained.

My task today is to distill the 620-page retrospective analysis report down into a two-hour presentation, he continued. We also labored mightily to condense the larger report down into a 28-page "Conclusions" document, which is available upon request. Please note that our analysis to date has concentrated on spring/summer chinook; we're now working on the retrospective analyses for fall chinook and steelhead, he said. The conclusions presented today pertain only to spring/summer
chinook.

Marmorek went through a series of fundamental questions which the PATH process is endeavoring to answer, including:

What survival improvement is needed throughout the life cycle of endangered stocks for survival and recovery?

1. Do all stocks show a similar pattern of recent change in stock indicators?

2. Is there a difference between
   -- upstream vs. downstream stocks?
   -- pre-1970 vs. post-1975 (completion of Snake River dams)

3. What do the retrospective analyses indicate about the contribution of each of the following factors (hydro, habitat, hatchery, harvest and climate) to the observed spatial/temporal differences?

Marmorek went through the results of the PATH retrospective analysis in detail, explaining that its conclusions are broken
down into three categories, depending on the weight of available data and evidence: low confidence, reasonable confidence and high confidence. The evidence supporting each conclusion was rated according to the following scale:

0 -- unsupported hypothesis
* -- best judgement - low confidence

** -- best judgement - limited confidence
*** -- reasonable confidence
**** -- high confidence

Marmorek's presentation concentrated on a series of fundamental questions, their answers and supporting evidence (please refer to Enclosure C for more detailed supporting evidence). These questions included:

1. Do all wild spring/summer chinook salmon stocks above Bonneville Dam show similar pattern of change in stock indicators since late 1950's?

Answer: All stocks have declined since late 1950's, but don't have the same trends [high]. Stocks from Salmon (Snake) River and Upper Columbia sub-basins show steeper decline than those from Lower Columbia sub-basin [reasonable]

2a. Have productivity and survival rates of spring chinook stocks changed, and if so, when?

Answer: Productivity and survival of the aggregate of spring chinook stocks have decreased, especially between the pre-1970 and post-1974 period [high].

2b. Are the differences in productivity (post-1974 vs. pre-1970) the same for upstream and downstream stocks?

Answer: Productivity and survival of upstream stocks decreased more, and was more variable, than productivity and survival of downstream stocks [reasonable-high].

4a. What do retrospective analyses indicate about the contribution of habitat changes to observed spatial/temporal differences?

Answer: habitat degradation affected many Columbia River salmon stocks before 1975 and may still affect some stocks; habitat of other stocks remains in high quality condition [reasonable]. Habitat changes may have contributed to declines in some streams, but changes in spawner-to-smolt survival are not large enough alone to explain post-1974 declines in aggregate stock [reasonable].

5a. What do retrospective analyses indicate about the contribution of artificial propagation to observed spatial/temporal differences?

Answer: artificial propagation has not significantly contributed to declines between pre-1970 and post-1974 periods [preliminary

results].

6a. What do retrospective analyses indicate about the contribution of harvest to observed spatial/temporal differences in stock indicators?

Answer: Harvest has not significantly contributed to declines in upstream stocks between pre-1970 and post-1974 periods [reasonable, interim conclusion].

7a. What do retrospective analyses indicate about the contribution of ocean conditions and terrestrial climate to observed spatial/temporal differences in stock indicators?

Answer: No consistent differences between upstream/downstream stocks in response to climate/ocean indicators [reasonable]. Climate conditions have contributed to observed differences between the pre-1970 and post-1974 periods [reasonable].

The next major question to consider, said Marmorek, is:

3b. To what extent can management actions under consideration within each of these factors (hydro, habitat, hatchery, harvest and climate) compensate for past impacts?

There are some general points that pertain to all of the questions regarding improvements, Marmorek said. These include:

Management should increase survival rates to allow survival/recovery of listed Snake River spring/summer chinook salmon

The interim smolt-to-adult return (SAR) survival goal is 2%-6%, based on:

1) Snake River SARs during the 1960's, when stocks were believed to be healthy

2) Warm Springs SARs when stock believed to be healthy

3) SARs necessary to replace spawning stock, given historical evidence of spawner-smolt survival and adult-to-spawner survival.

PATH prospective analyses will determine overall survival rate necessary for survival/recovery (spring 1997)

Only question 3b (hydro) has been addressed in detail so far; other questions will be addressed in FY'97.

Marmorek drew the group's attention to the hydropower decision flowchart on p. 28 of Enclosure C. This is a hierarchical set of questions related to the various management options -- improved transport, in-river migration and drawdown -- available to bring about survival improvements, he explained. Some of the specific questions and answers include:

3b(i). Can improvements in transport survival and collection of fish compensate for the effect of the hydrosystem on juvenile survival of Snake River spring/summer chinook salmon during their downstream migration?

Transport Survival: Survival to the point of release appears high enough to exceed the interim smolt passage survival goal; there is limited opportunity for improvement in direct survival. However, it is uncertain whether the overall survival of transported fish meets the survival goal, because of

- ? a lack of explicit estimates of survival of wild transported fish in most years
- ? differences in the interpretation of indirect evidence for and against delayed mortality.

Opportunities for increasing transport survival are uncertain because of unknowns in delayed mortality.

Collection: The proportion of fish transported can be significantly increased above 1996 levels. The ability of the future collection rate to achieve a smolt passage survival goal of 50%-70% depends on combined transport/in-river mortality.
There is little direct mortality associated with collection; it may be possible to improve SAR if collection causes delayed mortality.

3b(ii). Can modifications to in-river passage, other than drawdown, compensate for the effects of the hydrosystem on juvenile survival rates?

Answer: Current and proposed in-river passage measures are unlikely to achieve interim smolt passage survival goals. Improvements to the current system are unlikely to increase survival rates to meet the passage goal.

3b(iii). Can a combination of transportation under some conditions and in-river passage under other conditions compensate for the effects of the hydrosystem on juvenile survival rates of Snake River spring/summer chinook salmon during their downstream migration (i.e. with improvements to transportation and modifications to in-river passage, other than drawdown)?

Answer: This combination is unlikely to increase survival rates

to the target unless either measure by itself could accomplish same. This hybrid strategy might work if conditions favoring transportation and in-river passage were complementary (e.g. high-flow years favored in-river, low-flow years favored transportation). However, it appears that both approaches are likely to yield poorer survival in low-flow than in high-flow years. It may be worthwhile to implement such a hybrid operation as an adaptive management experiment.

3b(iv). Can drawdowns to spillway crest or natural river level compensate for the effect of the hydrosystem on juvenile survival rates of Snake River spring/summer chinook salmon during their downstream migration?

Answer: Drawdown of three or four Snake River dams to natural river should increase overall juvenile survival to the interim goal. The resulting improvement to SAR has not yet been evaluated. As for the spillway crest drawdown alternative,

- Spillway crest drawdown for the Snake River dams is no longer a management option, and has not been analyzed

- At John Day Dam, spillway crest drawdown may have a greater potential for increasing reservoir survival. The potential tradeoff between increased reservoir survival and decreased dam passage survival at this project has not yet been evaluated.

To summarize the results of our analyses surrounding question 3b, said Marmorek, we have made the following conclusions:

Transportation

- Direct transport survival meets goal

- Smolt-to-adult transport survival is unknown; there is uncertainty about delayed mortality

- The proportion of fish transported can be significantly increased above 1996 levels; the ability of this increased collection rate to achieve the survival goal depends on combined transport/in-river mortality.

In-River Measures Other Than Drawdown

- Unlikely to achieve interim smolt passage survival goal.

Hybrid In-River/Transportation

- Unlikely to increase survival rates to target.

Drawdown

- ? Drawdown of three or four Snake River dams to natural river level should increase juvenile survival to the interim goal.

- ? Spillway crest drawdown of John Day Dam may have greater potential for increasing reservoir survival, but the risk of increased dam passage mortality has not yet been evaluated.

Does this mean drawdown of only one or two dams will not achieve the interim juvenile survival goal? asked one meeting participant. No, it means that we only evaluated a four-dam drawdown scenario, replied Chris Toole of NMFS. I should also point out that the drawdown section of our report is very preliminary -- it only consists of two paragraphs, he said -- I wouldn't draw too many conclusions from our statements there, other than the fact that what we did was consistent with how we defined our goals in the first place.

4b. To what extent can habitat management actions compensate for past impacts?

Answer: Habitat actions alone cannot compensate for productivity declines [reasonable]. Productivity could be significantly increased through improved habitat management

- ? Where land-use impacts are intensive and

- ? If survival through other life-history changes is increased.

Recovery time will vary with the severity and type of habitat degradation [reasonable].

6b. To what extent can harvest actions compensate for past impacts?

Answer: conclusions available in spring 1997.

7b. To what extent does the development of hydrosystem, habitat, hatchery and harvest management actions need to consider future climatic conditions?

Answer: Changes in climate can affect the ability of management actions to compensate for past impacts [reasonable]. Management actions should consider the implications of possible future climatic conditions.

Marmorek identified a series of PATH process information needs,

which are listed on p. 38 of Enclosure C. He added that the list of regular PATH participants includes three members of the Independent Scientific Group; close and regular interaction with the ISG is integral to the PATH process, he said. The ISG's "Return to the River" report provides a conceptual framework distinct from the PATH work products, which focuses on more specific quantitative analyses of key hypotheses.

In addition to its retrospective analyses, PATH will also develop a series of prospective analyses, Marmorek explained. PATH's FY'97 prospective analysis goals include

P1: Estimate improvement in life-cycle survival for: survival, recovery, rebuilding and uncertainty associated with these estimates
-- prototype for spring/summer chinook (completion: spring 1997).

P2: Develop formal decision analysis tools to assess the risks and benefits of alternative sets of management actions across the four H's. Use:

-- retrospective analyses
-- improved models
-- input from the Implementation Team (actions)
-- Input from Research Review Group and ISAB (performance measures)

(completion: fall 1997)

P3: Use decision analysis/other methods to assess learning associated with:

-- alternative sets of management actions
-- research, monitoring and evaluation activities and
-- adaptive management experiments.

P4: Link results to ongoing research, monitoring and evaluation programs.

(See Enclosure C, pp. 40-46 for further details).

The group discussed the improvement in survival that will be necessary to bring about recovery for the listed stocks in the basin. If, every year, you could improve survival by 260% -- from, say, 14% survival to 37% -- you would gradually raise the probability of survival for these stocks under recent conditions, relative to the probability of their survival under historic conditions, Marmorek said. Of course, some stocks are inherently more productive than others;

for others, even if you were able to induce a four-fold improvement in survival each year, over the next 24 years, that might not be enough to bring modern reproductive performance up to that stock's historic levels. We have been looking at a variety of different assumptions in developing a prospective model that will tell us clearly what magnitude of survival improvement will be required to restore a given stock to its historic productivity, he explained.

Moving on, Marmorek spent a few minutes discussing the process under which PATH will be providing input to the region's decisionmakers. Chapter 6 of the retrospective analysis report discusses what tools we'll be using to generate that input, including formal decision analysis, he said. The approach outlined in Chapter 6 organizes the information into a structured, hierarchical decision tree; one distinct advantage is that it allows the exploration of many forms of evidence for and against hypothesized effects.

In response to a question about schedule, Marmorek said that, by October 1997, the PATH group hopes to complete its follow-up retrospective analysis for spring/summer chinook, to complete its retrospective analyses for fall chinook, and to have gotten everything in shape to do the retrospective analyses for steelhead in FY'98. On the prospective analysis side, by spring 1997, PATH intends to complete the estimated improvements in lifecycle survival analysis; by fall 1997, the PATH group hopes to have a more concrete idea of how much learning the region is likely to get about the key hypotheses.

We'd like to see the PATH process go faster, if possible, said Darm. Partly, that's a question of prioritization, Marmorek replied -- if you'd like us to set fall chinook aside for now, and focus entirely on spring/summer chinook, that would liberate some resources. Also transport survival -- particularly indirect survival -- seems to be a significant question, said Doug Arndt of COE. What's your process and schedule for getting at that? In our prospective analysis work, over the next three to four months, we're going to revise our existing tools to try and generate some transportation predictions that are more consistent with the patterns of spawning recruitment we've observed, Marmorek replied. I think we have a couple of testable hypotheses that will be at least partially answered by the returns from the 1995 and 1996 brood years, added Chris Toole. However, we haven't resolved this completely. To answer the question of when this will be resolved, you could potentially update it with each year's new information -- if you ran a formal decision analysis to date, you might find that you get a 50-50 probability estimate that each of your uncertainties could be true. If you run the same analysis next year, when you have a little more information, that might turn into a 60-40 probability, and the following year that

could be 70-30. The other question is, how much would your reliability, your weighing, of certain assumptions have to change in order to make a decision you feel comfortable with? said Toole. Also, we need to consider what kinds of experiments we could be doing to best shift those probabilities one way or another -- to collect more compelling evidence, in other words, Marmorek said. That's a big part of the second general PATH objective -- to assess the ability to distinguish among competing hypotheses from future information.

What about sockeye? asked Jean Edwards of Rep. Elizabeth Furse's office. I realize that our sockeye information is limited, but there will need to be a decision made on sockeye as well. Can we expect any guidance on sockeye from PATH? So far we haven't paid any attention to sockeye, Marmorek replied. The basic assumption we made in the 1995 Biological Opinion was that sockeye and spring/summer chinook are sufficiently similar that a conclusion you reach for spring/summer chinook may also be valid for sockeye. If we ask PATH to undertake a similar analysis for sockeye to the one you've undertaken for spring/summer chinook, what could you expect to give us? I doubt we could give you a detailed analysis, replied Earl Weber, but we could probably give you some insight into certain areas.

Can you explain the difference between your interim smolt-to-adult survival target of 2%-6% and the 1.5% proposed in the HARZA report? asked Mike Schiewe of NMFS. I think PATH looked more closely at the variability of various stocks over multiple years, Marmorek replied. We also used a broader set of egg-to-smolt survival estimates, added Toole.

For the purposes of conducting the prospective analysis, the PATH group needs to have some scenarios to give us projections on, said Darm -- for example, a four-pool natural river drawdown scenario on the Snake River, John Day drawdown to some level and X amount of flow augmentation. The subgroup that has been getting together with PATH met last week to discuss these alternatives and did come up with a tentative list. However, before we finalized anything, we agreed that it made sense to
bring that discussion before the full Implementation Team. My suggestion is that we schedule a follow-up session to nail down
those alternative scenarios for analysis, in which any interested IT members can participate, Darm said. After a few minutes of
further discussion, it was agreed to place this topic on the agenda for the follow-up IT meeting scheduled for Thursday, Feb.
13.

The discussion returned to the question of whether PATH should continue to divide its efforts between spring/summer and fall
chinook analyses, or should reallocate its resources to focus on completing the spring/summer chinook analyses first. The group also discussed the possibility of finding alternative personnel resources that PATH could draw on, such as the U.S. Fish & Wildlife Service and the U.S. Forest Service. I think we could also be moving faster on the identification of the factors at work in delayed mortality in transported fish, said Jim Anderson. After a few minutes of further discussion, it was agreed that
adding sockeye to the list of tasks before PATH is probably not a good idea at this time, if the region desires faster completion
of the retrospective and prospective analyses for spring/summer and fall chinook. Charlie Petrosky suggested that closer

coordination with the Stanley Basin Sockeye Technical Oversight Committee, which is overseeing the recovery of the Redfish Lake sockeye stock, might yield some useful sockeye information for PATH and the regional decisionmakers; they are PIT-tagging sockeye outmigrants and producing detailed SAR information, he said.

If your priorities were shifted such that you stopped working on fall chinook and concentrated exclusively on spring/summer
chinook, how much sooner than the fall of 1997 could you expect to complete the prospective analyses? asked Darm. Well, the other factor to consider is the fact that our efforts are divided between the four H's, as well as spring/summer and fall chinook, replied Marmorek. If we concentrate exclusively on spring/summer chinook, it might shorten the timeline for roducing that analysis by a month, said Howard Schaller. After a few minutes of further discussion, it was agreed to discuss both the
alternative scenarios for PATH analysis and any change in guidance on work priorities at the supplemental February 13 IT
meeting.

III. Proposed Executive Committee Agenda for February 25 and 26.

No significant changes to the draft agenda were proposed at this meeting.

IV. Discussion of Corps Position on Gas Abatement Research in
FY'97.

It was agreed to discuss this item at the Feb. 13 IT meeting.

V. Status Report on Ice Harbor Turbine Outage.

This item was not discussed at today's meeting.

VI. Draft 1997 Annual Water Management Plan and Issues Report
from TMT.

The TMT met on January 17 to discuss the 1997 Water Management Plan, using the 1996 plan as a starting point,
Henriksen said. In the process of that discussion, we identified a number of issues in response to the IT's request. We asked
various TMT members to frame these issues for IT consideration and put those out on the TMT's Internet homepage. On February 3, the TMT devoted another meeting to the development of this issues list; the result of this discussion was a document titled "List of Issues Compiled for the IT," dated February 3, 1997 (Enclosure D). This document includes a list of Water Management Plan and TMT Guidelines issues framed by Mark Reller of the State of Montana, and has also been reviewed by the TMT.

A second document, containing Water Management Plan issues developed by the Salmon Managers and dated Feb. 5, 1997, was also distributed (Enclosure E). This list has not been reviewed by TMT, Henriksen explained. The IT spent a few minutes discussing what to do with these issues lists, ultimately agreeing to work their way through them, resolving whatever issues they could and assigning the other issues to appropriate fora for further discussion and/or

resolution.

The IT spent the remainder of the meeting working its way through the three issues lists, beginning with the Technical Management Team's (Enclosure D). This list, and the IT's recommended disposition of each item, is reproduced below. Where further framing by the TMT is requested, the IT recommended that the TMT develop a clear statement of each issue, a background piece explaining the history and implications of each issue, any suggested resolutions for each issue and a brief statement of the range of views among the TMT participants.

LIST OF WATER MANAGEMENT PLAN ISSUES COMPILED FOR THE IT
3 February 1997

As requested by the IT (John Palensky), the issues listed below have been discussed at the TMT meeting of 3 February 1997. More detailed explanations of some of them were drafted by Mark Reller at the TMT's request and are attached in the appendix. This list is not exhaustive since the Salmon Managers have indicated that they are also adding other issues that will be submitted directly to the IT. The TMT as a group did not have time to go over the entire Salmon Managers' Issues List. Also missing from this list are the issues framed by CRITFC.

If there are any questions, please contact Cindy Henriksen at 503/326-3745 or Bolyvong Tanovan at 503/326-3764.

TMT 1. What is the sideboard for development of the 1997 Water Management Plan--the Biological Opinion or other plans?

[IT recommendation: this issue is being addressed through the IT/Attorneys' Group Alternative Dispute Resolution process.
Until the ADR process recommends otherwise, the TMT is to implement the Biological Opinion, taking into account other plans
as appropriate]

TMT 2. What deviation in operation requires mitigation, and what process is used to determine if mitigation is needed? How are the type and level of mitigation established?

[IT recommendation: this issue needs further discussion at the TMT level; once the TMT has had a chance to frame it further, it
will be placed on the March IT agenda for resolution. If possible, the TMT will distribute its draft emergency procedures
protocols prior to the March IT meeting, to give the IT membership a chance to prepare for this discussion]

TMT 3. What are the roles and responsibilities of individual members in TMT in the decisionmaking process and implementation of hydro operations? The TMT understands this issue is also being discussed in the ongoing ADR process.

[IT recommendation: this issue is being addressed through the IT/Attorneys' Group Alternative Dispute Resolution process]

TMT 4. What is the membership of the TMT? What is the role of NPPC in the TMT process?

[IT recommendation: this issue is being addressed through the IT/Attorneys' Group Alternative Dispute Resolution process]

TMT 5. Water temperature: what is the relative priority of achieving acceptable water temperature at the following areas in
the operational management of Dworshak?

- ? Dworshak Hatchery
- ? the Clearwater River
- ? the Lower Snake River

[IT recommendation: this issue needs further discussion at the TMT level; once the TMT has had a chance to frame it further, it
will be placed on the March IT agenda for resolution]

TMT 6. Is it the intent of the BiOp to meet flow objectives on a weekly, monthly, or seasonal basis?

[IT recommendation: NMFS to draft a response and report back at the March IT meeting]

TMT 7. Define the interim reservoir draft limit in the BiOp. Is it a draft limit used to meet flow objectives, or is it an absolute draft obligation (that has to be met in all cases, regardless of whether or not flow obligations were met)?

[IT recommendation: NMFS to draft a response and report back at the March IT meeting]

TMT 8. Are the interim limits in the BiOp appropriate? Do annual conditions allow for some flexibility in changing those
limits?

[IT recommendation: NMFS to draft a response and report back at the March IT meeting]

TMT 9. What collected biological data and what biological forecast methods will be used to guide in-season management
decisions (e.g. passage indices vs. PIT-tag, or actual counts)?

[IT recommendation: this issue needs further discussion at the TMT level; once the TMT has had a chance to frame it further, it
will be placed on the March IT agenda for resolution]

TMT 10. What biological threshold of changes between alternative scenarios should be used to guide decisions? Should alternatives with no measurable changes in fish travel time or survival be considered equivalent and decided on the basis of other factors?

[IT recommendation: this issue needs further clarification at the TMT level; once the TMT has had a chance to frame it further, it will be placed on the March IT agenda for resolution. However, if the TMT is asking whether modeling should be used to guide in- season decisionmaking, the IT's answer will be no.]

TMT 11. Can the potential additional draft of Dworshak for grouting operations relieve the need to draft an equivalent
volume from another reservoir?

IT recommendation: NMFS to draft a response and report back at the March IT meeting]

TMT 12. Should there be TDG monitoring at all projects on the spill priority list, and, if so, who should pay for the monitoring?

[IT recommendation: the question of TDG monitoring at Chief Joseph Dam is being addressed by the System Configuration Team; if SCT is unable to reach resolution, this issue will be discussed at the February 13 IT meeting. TMT will develop a brief
issue paper on the need for TDG monitoring below Hungry Horse Dam and at any other projects on the spill priority list where TDG monitoring may be warranted.]

TMT 13. Are the assumed overall biological benefits of the BiOp with respect to listed Snake River fish to be viewed as a maximum or a minimum requirement?

[IT recommendation: NMFS to draft a response and report back at the March IT meeting]

Next, the IT moved on to CRITFC's list of issues, which were outlined by Bob Heinith:

CRITFC 1. Spring and summer transportation.

[IT recommendation: the Salmon Managers to frame this issue for TMT discussion; it will then be brought forward at the Feb. 13 IT meeting].

CRITFC 2: Should the Corps' Fish Passage Plan be folded into the annual Water Management Plan? Given the number of common issues between the two documents, the Fish Passage Advisory Committee feels the two documents should be combined.

[IT recommendation: the Salmon Managers to frame this issue, including the views of the fish facility O&M Subcommittee, for
discussion at TMT; it will then be brought forward at the Feb. 13 IT meeting].

CRITFC 3: Should spill occur at collector projects when the temperature at those facilities meets or exceeds the 68° water
quality standard?

[IT recommendation: Heinith to frame this issue for TMT discussion; it will then be brought forward at the Feb. 13 IT
meeting].

CRITFC 4: Should criteria be established to deal with the power peaking issue?

[IT recommendation: Heinith to frame this issue for TMT discussion; it will then be brought forward at the Feb. 13 IT
meeting].

The IT moved on to the list of issues developed by the Salmon Managers (Enclosure E; please

see enclosure for a more detailed framing of each issue).

Salmon Managers 1: Idaho water laws and contractual agreements limit implementation of Snake River flow measures to meet the Biological Opinion flow objectives (parts 1, 2 and 3).

[IT recommendation: BOR to frame their plan for the delivery of the 427 KAF of Upper Snake augmentation water in 1997 for TMT discussion; if the TMT has an alternate recommendation, it should be developed for discussion at the Feb. 13 IT meeting. Part 1 of this issue, however, will require resolution in the appropriate political fora].

Salmon Managers 2: Kootenay Lake Operations.

[IT recommendation: COE to provide requested documentation for discussion by TMT; the issue will be framed further by TMT for discussion at the Feb. 13 IT meeting].

Salmon Managers 3: Documentation of TMT decisions, agreements and disagreements.

[IT recommendation: TMT to resolve this issue, looking to the draft Rules and Procedures for guidance].

Salmon Managers 4: Preemptive drafting of reservoirs.

[IT recommendation: preemptive drafting will be moot for 1997, unless the remainder of the year is extremely dry; based on
current forecasts, all storage projects will be drafted as far as possible for flood control. COE to provide documentation of the
need for these deep drafts at the next TMT meeting.

Discussion of the rest of the Salmon Managers' issues list was tabled until the Feb. 13 meeting.

VII. System Configuration Team FY'98 Funding Issues.

Bill Hevlin of NMFS distributed Enclosure F, a document entitled "Draft Summary of the Major Issues Identified by the SCT
in the COE's FY'98 Budget," dated Feb. 4 1997. Please review this list and come prepared to discuss it at the Feb. 13 IT
meeting, said Darm.

VIII. Multi-Year Implementation Plan Update.

This agenda item was not discussed at today's meeting.

IX. D.C. Intertie De-Rating -- Potential Effects on Operations.

This agenda item was not discussed at today's meeting.

X. Other.

Arndt distributed Enclosure K, a document titled "Final Work Plan -- Independent Review and Evaluation of Processes Utilized to Implement Structural Improvements at Columbia and Snake River Fish Passage Projects and Recommendations for Process Improvements," in response to a

previous request from IT.

Also, he said, as we've been discussing, the dissolved gas abatement project issue continues to bubble along; I've sent a
memo capturing what I thought were the key issues requiring resolution, and also making clear that, in the meantime, we're
continuing to carry out the planning phase, so that we can implement. My understanding is that a contract for these projects will need to be let by mid-February, so we're continuing on that path, Arndt said. And that's a concern, said Heinith. What we're trying to do is keep our options open to do these projects in 1997, Arndt said; I sent that memo out three weeks ago, asking that any concerns be communicated to me immediately - - none have. Essentially, we're anxious to resolve this issue. The contract won't be issued before the Feb. 13 IT meeting? asked Heinith. I don't believe so, Arndt replied -- if at all possible, I'll try to make sure that it is not. Then we'll resolve this at next week's meeting, said Darm.

XI. Next IT Meeting Date and Agenda Items, Approval of January 9 IT Meeting Minutes.

The next IT meeting was set for Thursday, February 13 from 9 a.m. to 4 p.m. at NMFS's Portland offices. Meeting notes
prepared by Jeff Kuechle, BPA contractor.